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(54) **MAPPING SIGNALS FROM A VIRTUAL FREQUENCY BAND TO PHYSICAL FREQUENCY BANDS**

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(57) ABSTRACT

Embodiments include processes, systems, and devices for reshaping virtual baseband signals for transmission on non-contiguous and variable portions of a physical baseband, such as a white space frequency band. In the transmission path, a spectrum virtualization layer maps a plurality of frequency components derived from a transmission symbol produced by a physical layer protocol to sub-carriers of the allocated physical frequency band. The spectrum virtualization layer then outputs a time-domain signal derived from the mapped frequency components. In the receive path, a time-domain signal received on the physical baseband is reshaped by the virtual spectrum layer in order to recompose a time-domain symbol in the virtual baseband.

